# *Puccinia glyceriae* (anam. *Aecidium hydrangeae-paniculatae*)

***Puccinia glyceriae*** S. Ito, J. Coll. Agric. Tohoku Univ. 3:200. 1909.

*Puccinia glyceriae* is an heteroecious, macrocyclic rust considered of quarantine importance in the U.S. The uredinial and telial stages are produced on the grass *Glyceria*, commonly referred to as manna grass. The name *Aecidium hydrangeae-paniculatae* has been applied to the spermogonial and aecial stages produced on panicled hydrangea (*Hydrangea paniculata*). This host plant is an ornamental originally from Japan and western China that is widely cultivated in the U.S. and other parts of the world.

**Spermogonia** mostly epiphyllous, in orange-yellow lesions, yellow to brown, subepidermal, flask shaped; type 4 (Hiratsuka & Hiratsuka 1980).

**Aecia** mostly hypophyllous, cupulate, pale yellow, peridial cells 24-32 × 16.5 22 µm, outer wall strongly verrucose, inner wall finely to striate verrucose; aeciospores globose to broadly ellipsoid, 19-26.5 × 15-22 µm, walls 0.7-1.2 µm thick, hyaline, finely verrucose.

**Uredinia** mainly epiphyllous, yellow to pale brown, without paraphyses; urediniospores globose to broadly ellipsoid or obovoid, 15-25 × 14-23 µm, walls 1-1.5 µm thick, pale yellow, echinulate with 6-8 scattered germ pores.

**Telia** amphigenous, mainly hypophyllous, covered by epidermis or sometimes erumpent, blackish brown, along veins, 0.5-3 mm long, without paraphyses; teliospores mostly clavate, sometimes cylindrical, 28-66 × 10-21 µm, walls 1-2 µm thick at sides and 1.5-7.5 µm thick at apex, apex unevenly thickened, chestnut brown, smooth, with a few longitudinal ridges; pedicels short, pale brown, persistent, mostly less than 12 µm long.

**Hosts:** spermogonial and aecial stages on *Hydrangea paniculata* Siebold (Hydrangeaceae); uredinial and telial stages on species of *Glyceria* (Poaceae).

**Geographic distribution:** reported only from Japan on *Hydrangea* and *Glyceria* spp.

The heteroecious condition and the connection of the spermogonia-aecial stages of *A. hydrangeae-paniculatae* on *Hydrangea paniculata* with uredinial-telial stages of *P. glyceriae* on *Glyceria leptolepis* was established by Okane and Kakishima (1991) based on field observations and inoculations.

Although there are other rusts on *Hydrangea* in other parts of the world, *Puccinia suzutake* Kakish.& S. Sato is the only other *Puccinia* reported on *Hydrangea* in Japan. It produces spermogonia and aecia (*Aecidium hydrangiicola* Henn.) on *Hydrangea*, and uredinia and telia on *Sasamorpha* (Poaceae) (Kakishima and Sato 1981). Aeciospores of *P. suzutake* are angular and measure 24-32 × 20-28 µm, wall 0.5 µm thick, verrucose with characteristic mushroom-shape refractive granules, while aeciospores of *P. glyceriae* measure 19-26.5 × 15-22 µm, wall 0.7-1.2 µm thick and finely verrucose.

**References:**

**Cummins, G.B.** 1971. The Rust Fungi of Cereals, Grasses and Bamboos. Springer-Verlag, New York, 570 pages.

**Hiratsuka, H., and Hiratsuka, N.** 1980. Morphology of spermogonia and taxonomy of rust fungi. Rep. Tottori Mycol. Inst. 18: 257-268.

**Hiratsuka, N., Sato, S., Katsuya, K., Kakishima, M., Hiratsuka, Y., Kaneko, S., Ono, Y., Sato, T., Harada, Y., Hiratsuka, T., and Nakayama, K.** 1992. The rust flora of Japan. Tsukuba Shuppankai, Takezono, Ibaraki, 1205 pages.

**Kakishima, M., and Sato, S.** 1981. *Puccinia suzutake*: a new bambusicolous rust, a perfect state of *Aecidium hydrangiicola*. Trans. Mycol. Soc. Japan 22: 321-328.

**Okane, I., and Kakishima, M.** 1991. *Puccinia glyceriae* and its anamorph, *Aecidium hydrangeae-paniculatae*. Trans. Mycol. Soc. Japan 32: 135-139.

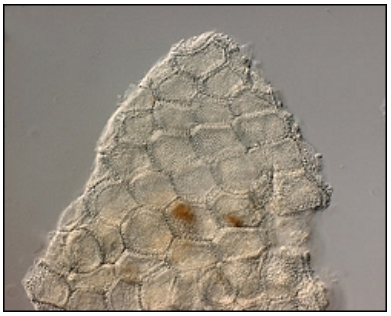
Suggested citation: Hernández, J.R.. Systematic Mycology and Microbiology Laboratory, ARS, USDA. 7 March 2005. Invasive Fungi. *Puccinia glyceriae* (anam. *Aecidium hydrangeae-paniculatae*). Retrieved October 6, 2007, from http://nt.ars-grin.gov/sbmlweb/fungi/index.cfm .

**Use this link to revisit SMML website**

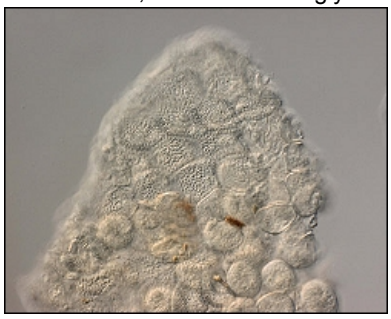
Aeciospores BPI 152284

Aeciospores BPI 152287

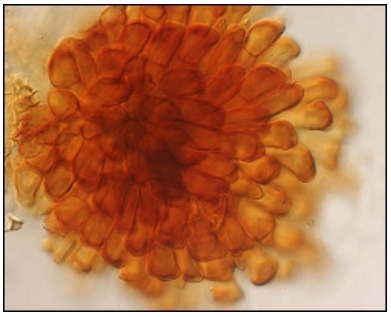
Peridial cells, inner wall finely to striate verrucose BPI 152284



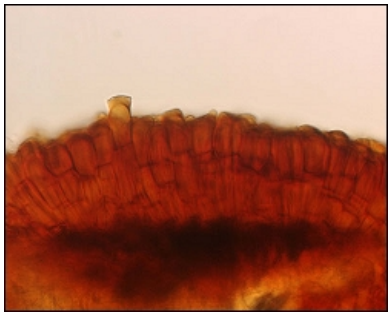
Peridial cells, outer wall strongly verrucose BPI 152284



Telia BPI 068462



Telia BPI 068462



Teliospores BPI 068462

Teliospores BPI 068462

Teliospores BPI 068462